



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/840,462	04/24/2001	Yi Li	401184	1939

23548 7590 11/23/2005
LEYDIG VOIT & MAYER, LTD
700 THIRTEENTH ST. NW
SUITE 300
WASHINGTON, DC 20005-3960

EXAMINER

SHARON, AYAL I

ART UNIT PAPER NUMBER

2123

DATE MAILED: 11/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/840,462	LI ET AL.	
	Examiner	Art Unit	
	Ayal I. Sharon	2123	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 September 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 July 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Introduction

1. Claims 1-7 of U.S. Application 09/840,462, originally filed on 4/24/2001, are pending. New Claims 6-7 have been added in the amendment filed 10/06/2005.

Double Patenting

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claims 1-5 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-5 of copending U.S. Application No. 09/840,444. Although the conflicting claims are not identical, they are not patentably distinct from each other because the present application pertains to (e.g., as in claim 1), "thermal characteristics", while the claims in U.S. Application No. 09/840,444 pertain to "biomechanical

and structural characteristics". Examiner finds that "thermal" characteristics are a subset of "biomechanical" characteristics.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The prior art used for these rejections is as follows:

- a. Huizenga et al., "An Improved Multinode Model of Human Physiology and Thermal Comfort". Proceedings of IBPSA Building Simulation '99. Sept.13-15, 1999. Vol.1, pp.353-359. ("Huizenga_1").
- b. Huizenga, C. "Window Performance for Human Thermal Comfort." 2000 ASHRAE Winter Meeting. Feb. 5-9, 2000. ("Huizenga_2").
- c. U.S. Patent 6,584,465 to Zhu et al. Filed 02/25/2000. ("Zhu").

6. **Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huizenga_1 in view of Huizenga_2.**

7. In regards to Claim 1, Huizenga_1 teaches the following limitations:

1. A method of creating thermal functional designs of textiles and clothing using computer and visual display monitor controlled by the computer, the method comprising

supplying the computer with information from
databases relating to thermal physiological
characteristics of a human body

(See Huizenga_1, especially: First page, "Model Overview" Section)

The "Model Overview" section provides a list of data used in the model.

and thermal characteristics of respective textile materials

(See Huizenga_1, especially: First page, "Model Overview" Section and fourth
page, "Clothing Node" section)

One of the data items listed in the "Model Overview" Section is "Clothing
(insulation level and moisture permeability)." Also, the "Clothing Node" section
teaches that "The addition of a clothing node in the Berkeley model is used to
model both heat and moisture capacitance of clothing."

for computational simulation of the information, and

(See Huizenga_1, especially: Fifth page, "Implementation" section)

In regards to the following limitation:

creating visual images for the monitor showing modules
of structural functional designs for designing apparel and textile articles.

Huizenga_1 expressly teaches (see Fig.3) an image showing the 16 body
segments of the Berkeley model, and also teaches (see Fig.8) a graph showing
the temperatures predicted by the Berkeley model for 2 of the 16 body segments
(left and right lower arm). Therefore, Huizenga_1 expressly teaches a visual
image for the monitor that shows information pertaining to the structural design of
the clothes.

However, Huizenga_1 does not expressly produce a visual image of the
structural design of the clothes per se.

Huizenga_2, on the other hand, expressly teaches (see Fig.8) producing a visual image of the heat characteristics of segments ("modules") of the body. The structure of the clothes is included in the calculation of this temperature data (see "Introduction"). The temperature data is visually represented by colors of the body segments ("modules").

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Huizenga_1 with those of Huizenga_2, because it is the same model that is taught in both references (see Huizenga_2, p.2).

Moreover, the limitation "for designing apparel and textile articles" appears to be merely an intended use.

8. In regards to Claim 2, Huizenga_1 teaches the following limitations:

2. The method according to claim 1, in which the database of the human body comprises human model data for specific body characteristics, including size and shape.

(See Huizenga_1, especially: Second page, "Model Overview" and "Segmentation" Sections)

The "Model Overview" section teaches that "... This allows the user to change not only physical data such as height, weight, ..."

Moreover, the "Segmentation" section expressly teaches that:

..... the model segmentation corresponds directly to the UC Berkeley segmented thermal manikin. This device provides us with the ability to accurately measure heat transfer coefficients and clothing insulation values for individual body parts, and we can use this data directly in our comfort model. The manikin measures heat flux to the environment for each segment, providing valuable data for validating the model.

9. In regards to Claim 3:

3. The method according claim 1, in which the database of the textile materials comprises clothing patterns data and product specification data.

(See Huizenga_1, especially: First page, "Model Overview" Section and fourth page, "Clothing Node" section)

Examiner interprets "clothing patterns data" as corresponding to information as to which body parts are covered by the clothing, and which are not. Huizenga_1 expressly teaches the use of product specification data, in particular insulation level and moisture permeability. (See First page, "Model Overview" Section and fourth page, "Clothing Node" section).

Moreover, Huizenga_1 also teaches (see "Introduction") that each body segment is modeled independently, and each segment has its own data pertaining to a clothing layer.

Examiner finds that this data corresponds to the claimed limitation of "clothing patterns data".

10. In regards to Claim 4, Huizenga_1 teaches the following limitations:

4. The method according claim 1, in which the database of the human body comprises thermal property data, including thermo-physiological and thermal comfort data of the human body.

(See Huizenga_1, especially: Second page, "Segmentation" Section)

The "Segmentation" section expressly teaches that:

This device provides us with the ability to accurately measure heat transfer coefficients and clothing insulation values for individual body parts, and we can use this data directly in our comfort model. The manikin measures heat flux to the environment for each segment, providing valuable data for validating the model."

11. In regards to Claim 5, Huizenga_1 teaches the following limitations:

5. The method according to claim 1, in which the database textile materials comprises thermal property data, including fibres, yarns, fabrics and garments.

(See Huizenga_1, especially: Fourth page, "Clothing Node" section)

The "Clothing Node" section teaches (emphasis added) that:

The moisture model uses the regain approach (Morton and Hearle 1993) to calculate the amount of moisture that a specific fabric will absorb at a given relative humidity.

Examiner finds that fibers and yarns are types of fabrics, and that garments are made out of fabrics. Therefore, these limitations are redundant.

12. Claims 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huizenga_1 in view of Huizenga_2 and further in view of Zhu.

13. In regards to Claim 6, Huizenga_1 teaches the following limitations:

6. (New) A method of creating thermal functional designs of textiles and clothing comprising:

(See Huizenga_1, especially: First page, "Model Overview" Section)

The "Model Overview" section provides a list of data used in the model.

selecting thermal-physiological characteristics of the human body from a body database;

Huizenga_1 expressly teaches (see Fig.3) an image showing the 16 body segments of the Berkeley model, and also teaches (see Fig.8) a graph showing the temperatures predicted by the Berkeley model for 2 of the 16 body segments (left and right lower arm).

selecting thermal characteristics of a textile material from a textile database; and

simulating fitting of the article of clothing made from the textile selected on the human body and,

(See Huizenga_1, especially: First page, "Model Overview" Section and fourth page, "Clothing Node" section)

One of the data items listed in the "Model Overview" Section is "Clothing (insulation level and moisture permeability)." Also, the "Clothing Node" section teaches that "The addition of a clothing node in the Berkeley model is used to model both heat and moisture capacitance of clothing."

However, Huizenga_1 does not expressly produce a visual image of the structural design of the clothes per se, as claimed in the following limitation:

using the thermal-physiological characteristics selected, displaying a visual image of thermal comfort of a human wearing the article of clothing made from the textile to aid designing textiles and articles of clothing.

Huizenga_2, on the other hand, expressly teaches (see Fig.8) producing a visual image of the heat characteristics of segments ("modules") of the body. The structure of the clothes is included in the calculation of this temperature data (see Huizenga_2: "Introduction"). The temperature data is visually represented by colors of the body segments ("modules").

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Huizenga_1 with those of Huizenga_2, because it is the same model that is taught in both references (see Huizenga_2, p.2). Moreover, the claimed limitation "to aid designing textiles and articles of clothing" appears to be merely an intended use.

However, neither Huizenga_1 or Huizenga_2 expressly teach the following limitation:

extracting a pattern for an article of clothing from a pattern database;

Zhu, on the other hand, does teach the extraction of clothing patterns from a pattern database (see Zhu, col.2, line 42 to col.3, line 20).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Huizenga_1 with those of Zhu, because Zhu's automatic "feature similarity" pattern search and retrieval system saves time and effort in pattern searching, and also minimizes mistakes (see Zhu, col.1, line 65 to col.2, line 10).

14. In regards to Claim 7, Huizenga_1 teaches the following limitations:

7. The method according to claim 6 wherein the textile database includes thermal property data for textile fibers, yarns, and fabrics.

(See Huizenga_1, especially: Fourth page, "Clothing Node" section)

The "Clothing Node" section teaches (emphasis added) that:

The moisture model uses the regain approach (Morton and Hearle 1993) to calculate the amount of moisture that a specific fabric will absorb at a given relative humidity.

Examiner finds that fibers and yarns are types of fabrics, and that garments are made out of fabrics. Therefore, these limitations are redundant.

Response to Amendment

Re: Information Disclosure Statement

15. In the previous Office Action mailed 03/29/05, Examiner thanked the Applicants for providing a copy of the Li reference that had been requested by the Examiner in the Office Action dated 9/24/04. The reference was reviewed and cited in the PTO-892 form that accompanied the Office Action dated 03/29/05.

16. The Applicants state in their most recent Amendment filed 09/27/05 that "Upon further investigation, correction of this patent application may be necessary." Examiner believes that the issue of the Li has been resolved.

Re: Double Patenting

17. Applicants have indicated that an appropriate Terminal Disclaimer will be filed upon the indication of allowable subject matter in either the present patent application or the co-pending patent application.
18. Examiner therefore is maintaining the rejections until the issue is resolved.

Re: Claim Rejections - 35 USC § 112

19. Examiner has found Applicants' arguments regarding the 35 USC § 112 first paragraph rejections (see pp.5-6 of the Amendment filed 09/27/2005) to be persuasive, in light of the teachings of the cited prior art. The 35 USC § 112 first paragraph rejections have been withdrawn.

Re: Claim Rejections - 35 USC § 103

20. Applicant's arguments (see pp.6-7 of the Amendment filed 09/27/2005) regarding claims 1-5 have been fully considered but they are not persuasive.
21. The Applicants argue that the newly amended limitation of using the invention "... for designing apparel and textile models" is not taught in the cited prior art. Examiner finds this limitation to be a mere intended use.

22. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963).

Conclusion

23. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Art Unit: 2123

Correspondence Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ayal I. Sharon whose telephone number is (571) 272-3714. The examiner can normally be reached on Monday through Thursday, and the first Friday of a biweek, 8:30 am – 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo Picard can be reached at (571) 272-3749.

Any response to this office action should be faxed to (703) 872-9306, or mailed to:


USPTO
P.O. Box 1450
Alexandria, VA 22313-1450

or hand carried to:

USPTO
Customer Service Window
Randolph Building
401 Dulany Street
Alexandria, VA 22314

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Tech Center 2100 Receptionist, whose telephone number is (571) 272-2100.

Ayal I. Sharon
Art Unit 2123
November 18, 2005


Paul L. Rodriguez 11/18/05
11/18/05
Art Unit 2123